



## Water Study

# PRELIMINARY BASIS OF DESIGN for WATER MUSEUM SQUARE

2<sup>nd</sup> Steet and Marshall Way  
Scottsdale, AZ

## PRELIMINARY Basis of Design Report

☐ ACCEPTED

☒ ACCEPTED AS NOTED

☐ REVISE AND RESUBMIT

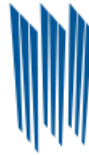


Disclaimer: If accepted; the preliminary approval is granted under the condition that a final basis of design report will also be submitted for city review and approval (typically during the DR or PP case). The final report shall incorporate further water or sewer design and analysis requirements as defined in the city design standards and policy manual and address those items noted in the preliminary review comments (both separate and included herein). The final report shall be submitted and approved prior to the plan review submission.  
For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY Idillon

DATE 6/29/2018

Prepared For:



MACDONALD  
DEVELOPMENT CORPORATION

3225 N. Central Avenue, Suite 100  
Phoenix, AZ 85012

Comments below and  
throughout.



The 16" transmission  
main cannot be tapped  
for potable or fire  
sprinkler system supply  
(e.g. see bldg 1 in utility  
plan herein)  
Refer to DS&PM Ch  
6-1.416 section K.

Submit hydraulic modeling  
per DS&PM Ch6 with DR  
case final BOD.

Any 4" public distribution  
system piping within or  
along the frontages of the  
properties to be developed  
must be upsized to the City  
minimum 6".

Prepared by:



SEG

Sustainability Engineering Group

8280 E. Gelding Drive, Suite 101

Scottsdale, AZ 85260

480.588.7226 [www.azSEG.com](http://www.azSEG.com)

Project Number: 180109

Submittal Date: June 15, 2018



EXPIRES 12-31-18

Case No.: 391-PA-2018

Plan Check No.: TBD

## TABLE OF CONTENTS:

### EXECUTIVE SUMMARY

1. INTRODUCTION	1
1.1 OBJECTIVE OF ADDENDUM	1
1.2 LEGAL DESCRIPTION:	1
1.3 EXISTING AND PROPOSED SITE ZONING AND LAND USES:	1
1.4 SUMMARY OF PROPOSED DEVELOPMENT:	2
2. DESIGN DOCUMENTATION AND CRITERIA	2
2.1 DESIGN COMPLIANCE:	2
2.2 DESIGN DOCUMENTATION:	2
2.3 DESIGN CRITERIA:	2
3. WATER DEMANDS	3
4. EXISTING WATER INFRASTRUCTURE	4
4.1 EXISTING WATER SYSTEM:	4
4.2 EXISTING METER INVENTORY:	4
5. PROPOSED WATER INFRASTRUCTURE	4
5.1 MAIN EXTENSIONS:	4
5.2 METERS	4
5.2 FIRE LINES AND HYDRANTS:	4
5.3 PHASING:	5
5.4 MAINTENANCE RESPONSIBILITIES:	5
6. WATER MODEL/SYSTEM COMPUTATIONS	5
6.1 PROCEDURES, POLICIES AND METHODOLOGIES:	5
6.2 SOFTWARE ACKNOWLEDGEMENT:	5
6.3 FIRE HYDRANT FLOW TEST:	5
7. SUMMARY/CONCLUSIONS	5
7.1 SUMMARY OF PROPOSED WATER IMPROVEMENTS:	5
7.2 PROJECT SCHEDULE:	5
8. APPENDICIES	5



- I Preliminary Site Plan
- II COS Q-S Map
- III Fire Hydrant Flow Tests
- IV Preliminary Utility Plan

## EXECUTIVE SUMMARY

Museum Square is a proposed mixed-use development located within the West Main Street area of Scottsdale generally lying south and west of East 1<sup>st</sup> Avenue and Marshall Way. The project includes:

- a high-rise hotel
- an apartment / condominium building
- three high-rise residential buildings
- related site amenities

## 1. INTRODUCTION

### 1.1 OBJECTIVE

The purpose of this report is to provide an analysis of the impact to the existing water system, with respect to daily demand and fire flow, and make recommendations for any necessary improvements.

### 1.2 LEGAL DESCRIPTION:

The improvement area lies within Sections 27 of Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The present Assessor's Parcel Numbers are as follows:

**Hotel:** North of 2<sup>nd</sup> Street and west of Marshall Way. Part of APNs 130-13-106, -108, and -109A

**Apartment / Condos:** North of 2<sup>nd</sup> Street east of Marshall Way. APNs 130-13 -164A, -165A, -166A, and -169B

**2<sup>nd</sup> Street ROW:** APNs 130-13-111 and -112 (from Goldwater Blvd to Marshall Way). Plus 121A and 131A

**Marshall Way ROW:** APNs 130-13-107 and -117 (from Goldwater Blvd to an alley south of E Main Street).

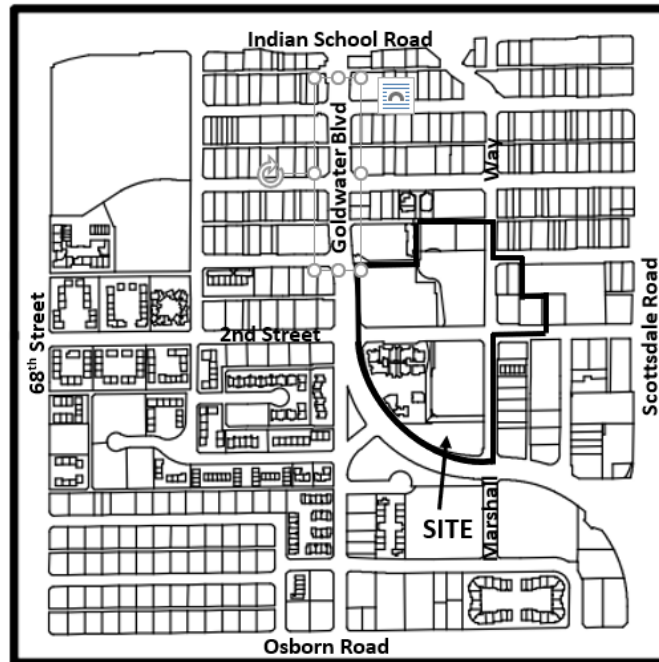
**Residential Buildings:** Courtyard at Main Street Plaza Scottsdale Condominium (MCR 973-06 and Loloma Partial Replat (MCR 823-22), and APN 130-12-172 an access drive.

### 1.3 EXISTING AND PROPOSED SITE ZONING AND LAND USES:

In 2003 Scottsdale City Council approved the Downtown Overlay to this general area and in 2009 adopted the Downtown Character Area Plan.

The original Loloma school site is zoned C-2 DO HP with the surrounding properties a mix of D/OC-2 PBD DO, D/DMU-2 PDB DO and D/OC-2 DO. The site presently supports the Loloma School, Museum of the West, The Stagebrush Theatre, the Loloma Transportation Center, and various parking areas. The transit center will be razed.

Proposed development will be a combination of a high-rise hotel, three residential buildings, and an apartment/condominium building along with the associated site amenities. Refer to the Preliminary Site Plan in **APPENDIX I**.



Vicinity Map

#### 1.4 SUMMARY OF PROPOSED DEVELOPMENT:

Reference **APPENDIX I** for a preliminary site plan of the proposed development.

## 2. DESIGN DOCUMENTATION AND CRITERIA

#### 2.1 DESIGN COMPLIANCE:

The proposed water system will be evaluated and designed compliant with the City's 2015 Water Master Plan Update and 2018 Design Standards and Criteria Manual (DS+PM) along with requirements of Arizona Department of Environmental Quality ("ADEQ") and Maricopa County Environmental Services Department ("MCESD").

#### 2.2 DESIGN DOCUMENTATION:

City of Scottsdale Water Quarter-Section Map 16-44  
Downtown water line as-built plans

#### 2.3 DESIGN CRITERIA:

Domestic demands shown in **Table 1** are from DS+PM Figure 6-1.2 Average Day Demands.

**TABLE 1 - AVERAGE DAILY DEMANDS**

Land Use	Inside Use (gpd)	Outside Use (gpd)	Total Use (gpd)	Units
High Density Condominium (condo)	155.3	30	185.3	per unit
Resort Hotel (includes site amenities)	401	44.6	446.3	per room
Restaurant	1.2	0.1	1.3	per sf
Commercial/ Retail	0.7	0.1	0.8	per sf
Commercial High Rise	0.5	0.1	0.6	per sf
Office	0.5	0.1	0.6	per sf
Institutional	670	670	1340	per acre

A 2500 gpm fire flow demand will be evaluated for high rise structures with dual sourcing.

### 3. WATER DEMANDS

A summary of the proposed water demands is presented below. **TABLE 2** represents the average daily demand and **TABLE 2A** depicts the instantaneous demand that will be utilized in the hydraulic calculations included in the final design report..

**TABLE 2 - CALCULATED WATER DEMANDS**

Key Map	Use	Sq. Ft.	Units	Total Use (gpd)	ADD (gpm)	MDD (gpm)	PHD (gpm)
1	Residential	115,000	61	185.3	7.8	15.7	27.5
2	Residential	162,000	79	185.3	10.2	20.3	35.6
3	Residential	150,000	77	185.3	9.9	19.8	34.7
4	Hotel		190	446.3	58.9	117.8	206.1
5	Residential	105,000	80	185.3	10.3	20.6	36.0
N/A	School		1.7	1340	1.6	3.2	5.5
				Totals	98.7	197.4	345.4

good!

**Table 2A - CALCULATED INSTANTANEOUS DEMANDS**

Key Map	Land Use	Sq. Ft.	Units	Total Use (gpm) *	ADD (gpm)	MDD (gpm)	PHD (gpm)
1	Residential	115,000	61	0.27	16.5	32.9	57.6
2	Residential	162,000	79	0.27	21.3	42.7	74.7
3	Residential	150,000	77	0.27	20.8	41.6	72.8
4	Hotel		190	0.63	119.7	239.4	419.0
5	Residential	105,000	80	0.27	21.6	43.2	75.6
N/A	School		1.7	1.88	3.2	6.4	11.2
				Totals	203.1	406.2	710.8

\* Reference DS+PM Figure 6-1.2 (in gallons per minute)

Distribution piping for the zoning case is evaluated for a maximum day plus 2500 gpm fire flow.

## 4. EXISTING WATER INFRASTRUCTURE

### 4.1 EXISTING WATER SYSTEM:

This area is located within Pressure Zone 1S supplied by a water transmission line grid including Indian School Road (36"), 2<sup>nd</sup> Street (16"), Thomas Road (24"), 68<sup>th</sup> Street (16") and Scottsdale Road (24"). The general water source is a reservoir and pump station located at Pima and Thomas Roads. The City's modeled system includes the transmission grid outlined above. The local distribution system consists of 12", 8" and 4" pipes. Refer to **Appendix II – COS QS Map 16-44**.

### 4.2 EXISTING METER INVENTORY:

Research or field inventories will be completed to document the existing metered service within this area. Fee credit will be requested for any abandoned metered service.

## 5. PROPOSED WATER INFRASTRUCTURE

### 5.1 MAIN EXTENSIONS:

No public main extensions are anticipated for this project. Fire and domestic services will be provided as follows:

- Residential building 1 will be served from the existing 16" DIP main in 2<sup>nd</sup> Street.
- Residential building 2 will be served from the existing 12" DIP main in Goldwater Blvd.
- Residential building 3 will be served from the existing 12" DIP in Marshall Way.
- The apartment building will be served the existing 12" DIP in Marshall Way using existing stubs.
- The hotel will be served from the existing 12" DIP in Marshall Way.

Refer to the Preliminary Utility Plan in **APPENDIX IV**.

### 5.2 METERS

All metered services will connect to the existing water lines fronting the proposed structures. Reduced pressure principle backflow devices will be installed on all metered services and pressure regulators supplied at all building connections.

### 5.2 FIRE LINES AND HYDRANTS:

Fire hydrant flow testing (See **APPENDIX III**) indicates the public system can provide a minimum 2500 gpm above 30 psi. Fire and domestic pumps will be required in high-rise structures. Low-rise office and retail generally require a minimum of 1500 gpm and can operate off the public system's pressure.

Fire hydrants will be provided for a 330-foot overlapping radius and fire department connections within 100 feet of a hydrant. Water valves will be provided along the public system such that the fire lines to all high-rise buildings are second sourced.



### 5.3 PHASING:

The area will be developed in phases but it is anticipated the necessary extensions of the public water system will all be completed in the initial phase.

### 5.4 MAINTENANCE RESPONSIBILITIES:

No main extensions are proposed. Therefore, the existing public mains will continue to be owned, operated and maintained by the City.

## 6. WATER MODEL/SYSTEM COMPUTATIONS

### 6.1 PROCEDURES, POLICIES AND METHODOLOGIES:

A detailed model of the local water system will be included in the Final Design Report to be approved by the City prior to the submittal of improvement plans. The general methodology used to evaluate the site will consist of a modeled network bounded by Goldwater Boulevard, 2<sup>nd</sup> Street and Marshall Way. Fire hydrant flow testing will be used to establish the boundary conditions and set up a three-point curve for the model's pump. Demand analysis will include average day, maximum day, peak hour and maximum day plus fire flow.

### 6.2 SOFTWARE ACKNOWLEDGEMENT:

Bentley WaterCAD® Version 8i, Select Series 6 will be utilized for the modeled scenarios to include average day, max day, peak hour and max day + fire flow.

### 6.3 FIRE HYDRANT FLOW TEST:

Fire hydrant flow testing was performed in March and June 2018. Refer to **Appendix III – Fire Hydrant Flow Tests**. The 1<sup>st</sup> Street flow test reports the flow in the local distribution system and the 2<sup>nd</sup> Street flow test reports the flow available in the 16" transmission line. Both tests report a static pressure around 80 psi and available flows to support this proposed development.

## 7. SUMMARY/CONCLUSIONS

### 7.1 SUMMARY OF PROPOSED WATER IMPROVEMENTS:

The existing public systems are sufficient to provide domestic and fire service to the three proposed high-rise residential buildings, the hotel and the apartment/condominium building.

### 7.2 PROJECT SCHEDULE:

Scottsdale board approvals are expected by Fall 2018. Final design reports and improvement plans will follow.

high-rise require  
2,500gpm fire flow

## 8. APPENDICIES

- I Preliminary Site Plan
- II COS Q-S Map
- III Fire Hydrant Flow Tests
- IV Preliminary Utility Plan

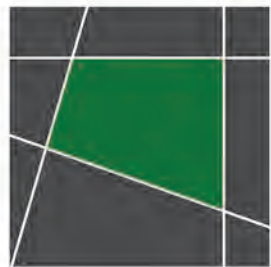
# *APPENDIX I*

## *Preliminary Site Plan*



MAP KEY

- 1 RESIDENTIAL BUILDING #1
  - 11 STORIES
  - 135' HEIGHT
- 2 RESIDENTIAL BUILDING #2
  - 13 STORIES
  - 150' HEIGHT
- 3 RESIDENTIAL BUILDING #3
  - 13 STORIES
  - 150' HEIGHT
- 4 HOTEL - THE ARIZONAN
  - 13 STORIES
  - 150' HEIGHT
  - 190 KEYS
- 5 APARTMENT / CONDO BUILDING
  - TBD
- 6 SURFACE PARKING LOT
  - 120 SPACES
- 7 ADDITIONAL ON-STREET PARKING
  - UP TO 46 SPACES (W. of Marshall Way)
- 8 RESIDENTIAL PARCEL PURCHASE
  - 134,213 SQFT
- 9 NORTH / SOUTH DISTRICT PROMENADE
- 10 CONDOMINIUM PARKING TRAY
  - 376 SPACES
- 11 GARAGE PARKING ACCESS
- 12 PLAZA / DRIVE COURT
- 13 MUSEUM "BRIDGE" EXPANSION
- 14 POOL & TERRACE
- 15 OPEN SPACE / GARDENS
- 16 MUSEUM EXPANSION
  - 30,000 SQFT +/-
- 17 ADDITIONAL ON-STREET PARKING
  - UP TO 21 SPACES (north of 1st street)
- 18 PROPOSED HOTEL (HILTON CANOPY)
  - 66' HEIGHT
  - 185 KEYS
- 19 MULTI-USE PUBLIC SPACE
  - LAWN AREA, PATIOS, & TERRACES
  - PERFORMANCE SPACE
  - SPLASH PAD
  - SCULPTURE GARDEN
- 20 RECONFIGURED HOTEL PARCEL PURCHASE
  - (47,343 SQFT)
- 21 ADDITIONAL ON STREET PARKING
  - UP TO 28 SPACES (south of 1st street)
- 22 PEDESTRIAN CONNECTION
- 23 ADDITIONAL ON-STREET PARKING
  - UP TO 37 SPACES (East of Marshall Way)
- 24 HOTEL PARKING TRAY
  - UPPER LEVEL (84 SPACES)
  - LOWER LEVEL (84 SPACES)
- 25 COVERED PROMENADE
- 26 RECONFIGURED ENTRY DRIVE (SHARED ACCESS / EGRESS)
- 27 ADDITIONAL ON-STREET PARKING
  - UP TO 37 SPACES (South of 2nd Street)
- 28 MAIN ART SCHOOL SHARED DRIVE ENTRY
- 29 HOTEL GARAGE PARKING ACCESS
- 30 THE GOLDWATER (CONDOMINIUMS)
- 31 NEW SIGNALIZED CROSSWALK
- 32 NEW SIGNALIZED MID-BLOCK CROSSWALK (HAWK)





# *APPENDIX II*

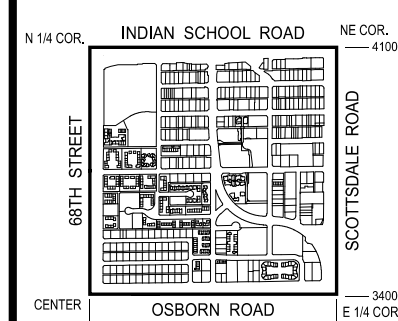
## *COS Q-S Map*

**GENERAL NOTES:**

- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE MAGNETIC GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN AS CALCULATED SECTION CORNERS AND ARE NOTED AS CALCULATED ON THE MAP.

**LEGEND:**

- Air Release Valve
- Non-potable Air Release Valve
- Blowoff
- Cap
- Cathodic Protection
- Fill Drain
- Fire Hydrant
- Non-GPS Point
- Pressure Reducing Valve
- Pump
- Reducer
- Sample Station
- Water Manhole
- Non-Potable Manhole
- Well
- Valve
- Non-potable Valve
- Vault
- Water Main
- Non-Potable Main
- Fire / Private Main
- Non-Scottsdale Main

**VICINITY MAP****NORTH**

SCALE: 1" = 100'

The map scale of 1" = 100' is based on a full size print of 30" x 36"

# WATER

## QUARTER SECTION MAP

# 16-44

NE 1/4 SEC. 27 T2N R4E

**CITY OF SCOTTSDALE**

**SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS**

3629 North Drinkwater Boulevard  
Scottsdale, Arizona 85251

**NOTICE**

THIS DOCUMENT IS PROVIDED FOR GENERAL INFORMATION PURPOSES ONLY. THE CITY OF SCOTTSDALE DOES NOT WARRANT ITS ACCURACY, COMPLETENESS, OR SUITABILITY FOR ANY PARTICULAR PURPOSE. IT SHOULD NOT BE RELIED UPON WITHOUT FIELD VERIFICATION.

THE CITY OF SCOTTSDALE

25-JUN-17

16-43

16-45

# *APPENDIX III*

## *Flow Test Results*

# Arizona Flow Testing LLC

## HYDRANT FLOW TEST REPORT

Project Name: Not Provided  
Project Address: 1<sup>st</sup> Street and Marshall Way, Scottsdale, Arizona 85251  
Client Project No.: Not Provided  
Arizona Flow Testing Project No.: 17137  
Flow Test Permit No.: C53386  
Date and time flow test conducted: June 30, 2017 at 8:30 AM  
Data is current and reliable until: December 30, 2017  
Conducted by: Floyd Vaughan – Arizona Flow Testing, LLC (480-250-8154)  
Witnessed by: Phil Cipolla – City of Scottsdale-Inspector (602-828-0847)

### Raw Test Data

Static Pressure: **82.0 PSI**  
(Measured in pounds per square inch)

Residual Pressure: **72.0 PSI**  
(Measured in pounds per square inch)

Pitot Pressure: **31.0 PSI**  
(Measured in pounds per square inch)

Diffuser Orifice Diameter: One (4 inch)  
(Measured in inches)

Coefficient of Diffuser: 0.9

Flowing GPM: **2,392 GPM**  
(Measured in gallons per minute)

GPM @ 20 PSI: **6,408 GPM**

### Data with 10 PSI Safety Factor

Static Pressure: **72.0 PSI**  
(Measured in pounds per square inch)

Residual Pressure: **62.0 PSI**  
(Measured in pounds per square inch)

Distance between hydrants: Approx. 400 Feet

Main size: Not Provided

Flowing GPM: **2,392 GPM**

GPM @ 20 PSI: **5,828 GPM**

Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.



### Flow Test Location

North ↑





# Arizona Flow Testing LLC

## HYDRANT FLOW TEST REPORT

Project Name: MacDonald  
Project Address: 2nd Street and Goldwater Blvd., Scottsdale, Arizona 85251  
Arizona Flow Testing Project No.: 18107  
Client Project No.: Not Provided  
Flow Test Permit No.: C54990  
Date and time flow test conducted: March 28, 2018 at 8:30 AM  
Data is current and reliable until: September 28, 2018  
Conducted by: Floyd Vaughan – Arizona Flow Testing, LLC (480-250-8154)  
Witnessed by: Phil Cipolla – City of Scottsdale-Inspector (602-828-0847)

### Raw Test Data

Static Pressure: **80.0 PSI**  
(Measured in pounds per square inch)

Residual Pressure: **75.0 PSI**  
(Measured in pounds per square inch)

Pitot Pressure: **42.0 PSI**  
(Measured in pounds per square inch)

Diffuser Orifice Diameter: 4 Inch  
(Measured in inches)

Coefficient of Diffuser: 0.9

Flowing GPM: **2,785 GPM**  
(Measured in gallons per minute)

GPM @ 20 PSI: **10,655 GPM**

### Data with 10 % Safety Factor

Static Pressure: **72.0 PSI**  
(Measured in pounds per square inch)

Residual Pressure: **67.0 PSI**  
(Measured in pounds per square inch)

Distance between hydrants: Approx. 480 feet

Main size: Not Provided

Flowing GPM: **2,785 GPM**

GPM @ 20 PSI: **9,862 GPM**

Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.



### Flow Test Location

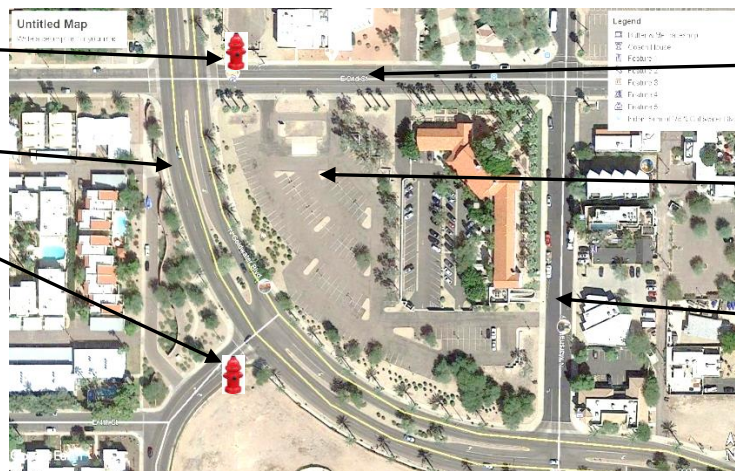
++

North ↑

Flow Fire Hydrant

North Goldwater Blvd.

Pressure Fire Hydrant



East 2nd Street

Project Site  
2nd Street and Goldwater  
Blvd.

North Marshall Way

# *APPENDIX IV*

## *Preliminary Utility Plan*



MUSEUM SQUARE  
PRELIMINARY UTILITY PLAN  
E 2ND STREET & N MARSHALL WAY SCOTTSDALE, AZ 85251

DEVELOPER

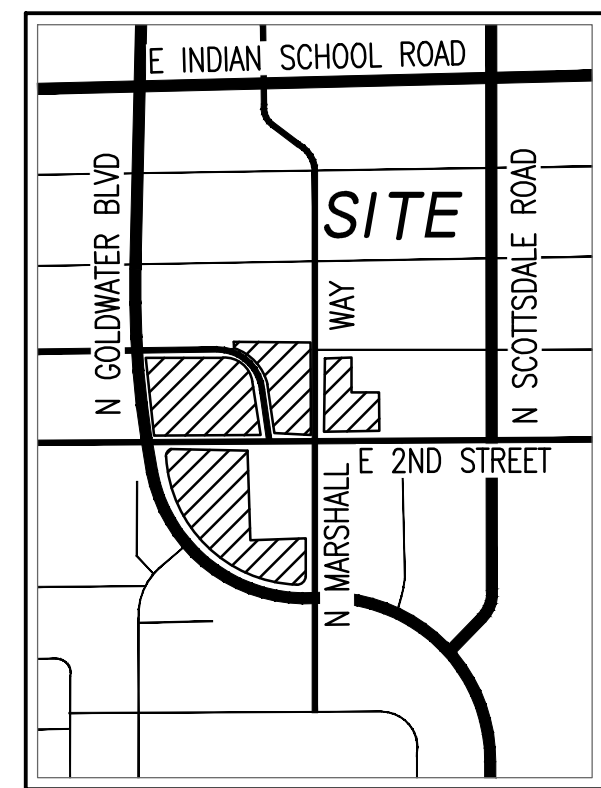
MACDONALD DEVELOPMENT  
3225 N. CENTRAL AVENUE  
PHOENIX, ARIZONA 85012  
PHONE:  
ATTN:

ARCHITECT

SWABACK  
7550 E. MCDONALD DRIVE  
SCOTTSDALE, ARIZONA 85250  
PHONE: 480-367-2100  
ATTN: CHRIS MCKIBBEN

ENGINEER

SUSTAINABILITY ENGINEERING GROUP  
8280 E. GELDING DR. SUITE #101  
SCOTTSDALE, ARIZONA 85260  
PHONE: 480-588-7226  
ATTN: ALI FAKIH



VICINITY MAP  
SCALE: NTS

BENCHMARK

BENCHMARK IS A CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE LOCATED AT THE INTERSECTION OF SCOTTSDALE ROAD AND INDIAN SCHOOL ROAD BEING THE NORTHEAST CORNER OR SECTION 27, TOWNSHIP 2 NORTH, RANGE 4 EAST.

ELEVATION = 1260.366' NAVD 88

BASIS OF BEARING

THE BASIS OF BEARING AND ALL MONUMENTATION SHOWN HEREON IS BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF SECTION 27, TOWNSHIP 2 NORTH, RANGE 4 EAST, USING A BEARING OF NORTH 00°09'25" WEST AS SHOWN ON THE MINOR LAND DIVISION PLAT RECORDED IN BOOK 1288, PAGE 43, MARICOPA COUNTY RECORDS.

LEGAL DESCRIPTION

A PORTION OF CENTER PARCEL 17, A PORTION OF WALKWAY SOUTH PARCEL 16, A PORTION OF TRANSIT PARCEL 14 AND COURTYARD PARCEL 35, SHARED DRIVEWAY NORTH PARCEL 30, LOFT PARCEL 25, SHARED DRIVEWAY SOUTH PARCEL 32, SHARED DRIVEWAY CORE NORTH PARCEL 33 AND SHARED DRIVEWAY CORE SOUTH PARCEL 34 AS SHOWN ON THE FINAL PLAT OF LOLOMA RECORDED IN BOOK 597, PAGE 6, MARICOPA COUNTY RECORDS AND THE RE-PLAT OF LOLOMA RECORDED IN BOOK 823, PAGE 22, MARICOPA COUNTY RECORDS, A PORTION OF THE NORTHEAST QUARTER OF SECTION 27, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

NOTE

SANITARY SEWER BETWEEN BUILDINGS 1 & 2 AND 2 & 3 IS ASSUMED TO BE BELOW UNDERGROUND PARKING STRUCTURE CEILING.

EXISTING SANITARY SEWER MANHOLE SCHEDULE

MANHOLE #	RIM	INVERT	INVERT
EX MH#1	1257.74'	1250.69' N&S&W	
EX MH#2	1257.63'	1250.18' NE&S	
EX MH#3	1257.33'	1250.83' N	1249.89' E&SW
EX MH#4	1256.63	1249.42' N&S	1249.46' W
EX MH#5	1256.25'	1248.95' N&S	1249.07' E
EX MH#6	1255.67'	1248.07' N&S	

KEY NOTES

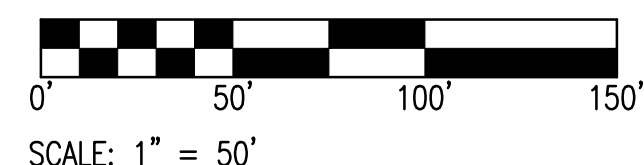
- ① TAPPING SLEEVE, VALVE, BOX, & COVER SIZE PER PLAN
- ② 2" WATER METER
- ③ 4" FIRE LINE
- ④ 2" WATER SERVICE
- ⑤ GATE VALVE, BOX, & COVER, SIZE PER PLAN
- ⑥ BACKFLOW PREVENTER, SIZE PER PLAN
- ⑦ TAPPED CAP WITH 2" CORP STOP, SIZE PER PLAN
- ⑧ 8" PVC SEWER LINE, SDR-35
- ⑨ 6" PVC SEWER LINE, SDR-35
- ⑩ SEWER CLEANOUT
- ⑪ SEWER PLUG, SIZE PER PLAN
- ⑫ RELOCATE EXISTING FIRE HYDRANT
- ⑬ FIRE DEPARTMENT CONNECTION (FDC), SIZE PER PLAN

PROPOSED LEGEND

- 8" W WATER LINE
- METER BOX
- 6" S SEWER LINE
- BACKFLOW PREVENTER
- RISER ROOM
- TAPPING SLEEVE, VALVE BOX AND COVER
- FDC FIRE DEPART CONNECTION (FDC)

EXISTING LEGEND

- MANHOLE
- EX. 8" S SEWER LINE
- EX. 12" W WATER LINE
- FIRE HYDRANT
- CENTER LINE
- PROPERTY LINE



NOTE TO CONTRACTORS:  
THIS SET OF DRAWINGS AND DOCUMENTS IS INTENDED AS A SET OF GUARANTEES FOR THE PROJECT AND ARE INTENDED TO BE USED IN CONJUNCTION WITH A SET OF CONSTRUCTION SPECIFICATIONS TO BE SUPPLIED BY OWNER. THEY MUST BE READ TO INCORPORATE ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES INCLUDING FEDERAL A.C.A. REQUIREMENTS. THIS SET ASSUMES THAT THERE ARE NO UNUSUAL SOIL CONDITIONS OR WIND LOADS. THE FAILURE OF THIS CONTRACTOR TO REQUIRE SIGNIFICANT CHANGES TO THEIR DOCUMENTS, OR THE NECESSITY OF THE GENERAL CONTRACTOR TO COMPLY WITH ALL APPLICABLE CODES AND TO INFORM THE OWNER/ARCHITECT OF ANY QUESTIONS OR CLARIFICATIONS WHICH ARE DESIRED. CONTRACTORS SHALL ALSO VISIT THE SITE BEFORE BIDDING. CONTRACTORS ARE REQUIRED TO KNOW ALL OBSERVABLE CONDITIONS AND APPLICABLE CODES.



8280 E GELDING DR #101, SCOTTSDALE, ARIZONA 85260  
WWW.AZSEG.COM TEL: 480.588.7226



PROJECT  
MUSEUM SQUARE

LOCATION  
E. 2ND STREET & N. MARSHALL WAY  
SCOTTSDALE, AZ 85251

DRAWN: SANTIAGO  
DESIGNED: SANTIAGO  
CHECKED: COUNSELL  
PROJ. MGR.: FAKIH

DATE: 06/14/2018  
ISSUED FOR:

REVISION NO.:	DATE:

JOB NO.: 180109

SHEET TITLE:

PRELIMINARY UTILITY PLAN

SHEET NO.: C4.00

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND THE PROPERTY OF SUSTAINABILITY ENGINEERING GROUP, AND SHALL REMAIN THEIR PROPERTY. THE USE OF THIS DRAWING SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH IT IS PREPARED AND PUBLICATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE.